

### **REMARKS**

Claims 1-3 and 6-15 constitute the pending claims in the present application. Applicants respectfully request reconsideration in view of the following remarks. Issues raised by the Examiner will be addressed below in the order in which they appear in the prior Office Action.

Because the Advisory Action mailed May 26, 2005 indicated that the Reply After Final filed May 17, 2005 was not entered for purposes of appeal and because Applicants understand that the Amendment After Final filed August 17, 2005 was not entered for purposes of appeal, the claim amendments presented herein are made with respect to the claims as amended on June 29, 2004. Remarks made in the Reply filed May 17, 2005 are incorporated herein by reference to the extent which they remain relevant.

#### **Interview Summary**

Applicant Glenn McGall and Applicants' representatives would like to thank the Examiner for granting the in-person interview conducted on July 14, 2005. During the interview, the art and rejections of record were discussed. The Examiner stated that she believed that there was motivation to combine references, as discussed in prior Office Actions. Although Applicants respectfully disagree with the Examiner, this aspect of the rejection was not discussed further. Dr. McGall then discussed the problems solved by the present invention. In particular, Dr. McGall explained the significance of the examples presented in the specification. The Examiner stated that the exemplification in the specification was evidence of unexpected results, and that claims reciting rotations of 90 degrees constituted allowable subject matter. The Examiner requested a Declaration stating that the results in the specification were unexpected. The Examiner indicated that this Declaration would be entered after final.

Applicants' Agent, Jesse Fecker, would like to thank the Examiner for granting an additional telephonic interview on September 8, 2005. During the interview, Applicants' Agent and the Examiner reached agreement on claim language that the Examiner believed was commensurate in scope with the results demonstrated in the Examples. Applicants respectfully submit that the teachings of the application support broader claims, and reserve the right to pursue such claims in a continuation application.

Claim Amendments

The limitations of Claim 5 have been incorporated into Claim 1. Accordingly, Claims 4 and 5 have been canceled. Claims 6 and 7 have been amended to remove language made redundant in view of the amendments to Claim 1.

Claim 1 has further been amended to recite that step (e) occurs in a synthesis chamber; that the support has four vertices, one of which points downward following rotation; that the rotation is about 90 degrees or a multiple thereof; and that rotation occurs after each step. Support for the amendments can be found, *inter alia*, in the Examples, page 19, line 24 through page 21, line 8.

No new matter has been added.

Rejection of Claims 1-15 Under 35 U.S.C. 103(a) Over Winkler et al. in View of Goldberg et al.

Claims 1-15 stand rejected as allegedly obvious over US 5,885,837 to Winkler et al. ("Winkler") and US 5,959,098 to Goldberg et al. ("Goldberg"). The Examiner alleges that it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the vertical positioning of Goldberg to the synthesis of Winkler "for the expected benefit of facilitating bubble removal as taught by Goldberg et al." Applicants respectfully traverse the rejection to the extent that it is maintained over the claims as currently amended.

As stated in Paragraph 4 of the Declaration Under 37 C.F.R. § 1.132 of Glenn H. McGall, Ph.D. ("the Declaration"), which is submitted concurrently herewith, the method as presently claimed is unexpected in view of the art of record. Paragraph 3 of the Declaration demonstrates that rotation of a support between attaching or binding steps significantly lowers intra-support variability, as measured by the coefficient of variation and the top to bottom ratio of nucleic acid arrays on the supports. Neither Winkler nor Goldberg, separately or in combination, teach or otherwise suggest that intra-support variability could be reduced by rotation of the substrate between binding or attaching steps. Thus, and as acknowledged by the Examiner, the claimed method produces an unexpected and advantageous result in the nucleic acid arrays obtained therefrom. For at least this reason, the claimed method is not obvious in view of the art of record. Reconsideration and withdrawal of the rejection are respectfully requested.

Applicants respectfully maintain that there is no motivation or suggestion for one of ordinary skill in the art to combine the method of Winkler with the vertical flow cell positioning of Goldberg. Accordingly, Applicants reserve the right to pursue the subject matter removed from the claims in a continuation application.

Rejection of Claims 1-15 Under 35 U.S.C. 103(a) Over Gamble et al. in View of Winkler et al.

Claims 1-15 stand rejected as allegedly obvious over US 5,981,733 to Gamble *et al.* ("Gamble") in view of Winkler. Applicants traverse the rejection to the extent that it is maintained over the claims as currently amended.

As stated in Paragraph 4 of the Declaration Under 37 C.F.R. § 1.132 of Glenn H. McGall, Ph.D. ("the Declaration"), which is submitted concurrently herewith, the method as presently claimed is unexpected in view of the art of record. Paragraph 3 of the Declaration demonstrates that rotation of a support between attaching or binding steps significantly lowers intra-support variability, as measured by the coefficient of variation and the top to bottom ratio of nucleic acid arrays on the supports. Neither Winkler nor Gamble, separately or in combination, teach or otherwise suggest that intra-support variability could be reduced by rotation of the substrate between binding or attaching steps. Thus, and as acknowledged by the Examiner, the claimed method produces an unexpected and advantageous result in the nucleic acid arrays obtained therefrom. For at least this reason, the claimed method is not obvious in view of the art of record. Reconsideration and withdrawal of the rejection are respectfully requested.

Applicants respectfully maintain that there is no motivation or suggestion for one of ordinary skill in the art to combine the method of Winkler with that of Gamble. Accordingly, Applicants reserve the right to pursue the subject matter removed from the claims in a continuation application.


CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that the pending claims are in condition for allowance. The Examiner may address any questions raised by this submission to the undersigned at 617-951-7633. Should any further extension of time be required, Applicants hereby petition for same and request that the extension fee and any other fee

required for timely consideration of this submission be charged to **Deposit Account No. 18-1945.**

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Respectfully submitted,

By   
Jesse A. Fecker

Registration No.: 52,883  
ROPES & GRAY LLP  
One International Place  
Boston, Massachusetts 02110-2624  
(617) 951-7633  
(617) 951-7050 (Fax)  
Agent For Applicants